

APPENDIX A

**LBT/BP Algorithm For A Transmitter On The Radio Network.**

BACKOFFINIT = 20;

R\_RSP\_TIMEOUT = R\_INTERPOLL\_GAP;

MAX-TX-TRIES = 20;

MAX\_IDLE\_TRIES = 50;

*r/.rg* - functions which return a maximum backoff number based on the input parameter.

Wait for a MAC\_send call.

if p\_flag is non-zero then

begin

select a random number, *i*, between 0 and BACKOFF\_INIT;

SLOT\_OFFSET = *i* R\_SLOT\_SIZE;

end

else

SLOT\_OFFSET=0

TX\_RETRIES=0

IDLE\_RETRIES=0

while TX\_RETRIES < MAX\_TX\_TRIES and IDLE\_RETRIES < MAX\_IDLE\_TRIES and not OK do

begin

OK = False;

detect an idle channel for SLOT\_OFFSET+R\_IDLE\_TIME time units;

SLOT\_OFFSET=0;

if channel is idle then

begin

send\_frame;

if a return priority response is expected then

begin

wait for response or R\_RSP\_TIMEOUT timeout;

if a valid response has been received then

OK=true;

else (assume a collision has occurred)

begin

TX\_RETRIES=TX\_RETRIES+1;

select a random number, *j*, between 0 and *r/(TX\_RETRIES)*;

SLOT\_OFFSET=*j* R\_SLOT\_SIZE;

end

end

end

else (the channel is not idle)

begin

```
wait until the channel is idle;  
IDLE_RETRIES=IDLE_RETRIES+1;  
select a random number,  $i$ , between 0 and  $rg(IDLE\_RETRIES)$ ;  
SLOT_OFFSET=k R_SLOT_SIZE;  
end.
```